



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

less after the second cut than after the first? Experiment showed that it is so; that, whereas it takes five and one-half days on the average for regeneration to occur after the first cut, it is effected under otherwise similar conditions in three days after the second. The repetition of the stimulus quickens the response.

If a piece of the stem of *Tubularia* be cut at both ends, regeneration will take place at both the oral and the aboral end. If, now, in one case the oral end be sealed with wax so that it cannot grow and the aboral be left free to regenerate, will the time required for the formation of the aboral head differ in the two cases? The result showed that regeneration of the aboral head occurred in all cases inside of seven days after the cut when only one head was forming, whereas it took over twelve days when both heads were arising. Regeneration is slower when the formative stuff goes to two points than when it aggregates at only one.

The tentacles of *Tubularia* surround the oral end at two levels. After decapitation, consequently, reparation of tentacles occurs at two zones, a distal and a proximal. The question arises: What will happen if after reparation has begun in both zones the distal zone is cut off? Will a head with only one zone of tentacles arise? Here the marvelous phenomenon of regulation was most strikingly shown. The normal number of zones was regained, and, indeed, by either one of four modes, all producing the same end result,—the restoration of the perfect form of the adult. These four modes are: (1) by regeneration—the cut end grew out, and in this regenerated part the distal zone of tentacles arose by reparation; (2) by dissolution—the remaining (proximal) zone of tentacles was dissolved and in its place the normal condition of two zones appeared; (3) by replacement—the distal zone having been removed so as to leave the maximum space beyond the proximal zone, a new series of tentacles sometimes arose in this empty space without disturbing the proximal zone; (4) by division—the arising tentacles of the proximal zone disintegrated in their middle, forming the two zones characteristic of normal development. C. B. D.

**Determination of Sex in Plants.**—The causation of sex in the hemp plant, studied at various times in the past, forms the subject of a short communication in the *Comptes Rendus* of the French Academy for Nov. 15, 1897, by M. Molliard, who concludes from his experiments that the medium in which the plant grows may affect its sex, and that, in this case, contrary to the currently admitted

theory, the transformation of staminate into pistillate flowers occurs under conditions disadvantageous for the development of the vegetative apparatus. T.

**Plankton Studies.** — The first article of volume five of the *Bulletin of the Illinois State Laboratory of Natural History*, recently published,<sup>1</sup> contains a bibliography of the methods of conducting plankton studies and a useful description of the oblique haul and pumping methods which have been in successful use for some years at the Biological Station at Havana, Ill., in the collection and separation of the minute animals and plants floating free in the water and incapable of materially changing their position by their own efforts.

Students of this rather new phase of biology will also find an interesting preliminary report on the plankton of some of the lakes of the Alps and Jura<sup>2</sup> in the *Bulletin of the Botanical Laboratory of the University of Geneva* for June, 1897. T.

---

## ZOOLOGY.

**Cell Lineage.** — In a paper entitled "Considerations on Cell Lineage, Based on a Reëxamination of Some Points on the Development of Annelids and Polyclades,"<sup>3</sup> Prof. E. B. Wilson presented observations regarding the origin and relations of the mesoblast in annelids and polyclades which illustrate the fact of ancestral reminiscence in cell lineage. In some of the annelids (*Aricia*, *Spio*, *Nereis*, and others) the primary mesoblasts have not been properly so called, for before giving rise to the mesoblast bands they bud forth cells that may be, in some cases, traced into the wall of the archenteron. In *Nereis* not less than six or eight such cells are formed; these become pigmented, wander into the interior, and finally give rise to the posterior part of the archenteron. In *Aricia* and *Spio* only a single pair of corresponding cells is formed, and they are so small as to play a quite insignificant part in the building of the body. A comparison of these results with those of Conklin on *Crepidula*

<sup>1</sup> Kofoid, Plankton Studies, I. Methods and apparatus in use in plankton investigations at the Biological Experiment Station of the University of Illinois.

<sup>2</sup> Pitard, Quelques notes sur la florule pélagique de divers lacs des Alpes et du Jura.

<sup>3</sup> Read before the New York Academy of Sciences, Biological Section, Dec. 13, 1897.